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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/535,332	05/18/2005	Manfred Fuchs	P05,0173	9680

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SCHIFF HARDIN, LLP  
PATENT DEPARTMENT  
6600 SEARS TOWER  
CHICAGO, IL 60606-6473

EXAMINER
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LEE, SHUN K

ART UNIT	PAPER NUMBER
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2884

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/23/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

10/535,332

Applicant(s)

FUCHS ET AL.

Examiner

Shun Lee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 9-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 9-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 May 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>20050518</u> . | 6) <input type="checkbox"/> Other: ____.  |

**DETAILED ACTION**

***National Stage Application***

1. The Examiner acknowledges consideration of the International Preliminary Examination Report in International Application PCT/DE03/03457. MPEP § 1893.03(e).

***Claim Objections***

2. Claims 13 and 16 are objected to because of the following informalities:
  - (a) in claim 13, "poly-para-xylylene" on line 2 should probably be --poly-para-xylylene-- (see paragraph 14); and
  - (b) in claim 16, "BaFBr:Eu" on line 2 should probably be --BaFBr:Eu--.

Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 9-12 and 14-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Kano *et al.* (US 4,741,993).

It should be noted that even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself (MPEP § 2113). In this case, the specification (paragraph 16) discloses that "The non-abutting region 7 is hardened in order to form a surface resistant against mechanical stresses or scratches". Therefore, the protective layer as recited in independent claim 9 requires a

high surface hardness (*i.e.*, hardened only in a region not abutting the luminophore layer) so as to be resistant against mechanical stresses or scratches.

In regard to claim **9**, Kano *et al.* disclose (Fig. 1) an image detector for an x-ray image, comprising:

- (a) a luminophore layer (12);
- (b) a protective layer (13a, 13b) lying over the luminophore layer (12), the protective layer (13a, 13b) being hardened (*i.e.*, "high surface hardness"; column 4, lines 10-21) only in a region (13b) not abutting the luminophore layer (12).

In regard to claim **10** which is dependent on claim 9, Kano *et al.* also disclose (column 11, lines 40-43; column 13, line 19 to column 14, line 49; Fig. 1) a non-hardened region (13a) that abuts the luminophore layer (12) that is at least 5  $\mu\text{m}$  thick (*i.e.*, 1  $\mu\text{m}$  to 100  $\mu\text{m}$  thick with an example of a 20  $\mu\text{m}$  thick layer).

In regard to claim **11** which is dependent on claim 9, Kano *et al.* also disclose (column 11, lines 40-43; column 13, line 19 to column 14, line 49; Fig. 1) that the hardened region that does not abut the luminophore layer that is at least 3  $\mu\text{m}$  thick (*i.e.*, 1  $\mu\text{m}$  to 100  $\mu\text{m}$  thick with an example of a 30  $\mu\text{m}$  thick layer).

In regard to claim **12** which is dependent on claim 9, Kano *et al.* also disclose (Fig. 1) that the hardened region (13b) of the protective layer (13a, 13b) is an electron-beam-treatment (column 9, line 62 to column 3, line 62) hardened region (*i.e.*, "high surface hardness"; column 4, lines 10-21).

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In regard to claim **14** which is dependent on claim 9, Kano *et al.* also disclose that the luminophore layer is a needle image plate (*i.e.*, comprising a fine pillar shaped block structure; column 8, line 52 column 9, line 17).

In regard to claim **15** which is dependent on claim 9, Kano *et al.* also disclose (column 5, line 8 column 7, line 11) that the luminophore layer is comprised of alkali halides.

In regard to claim **16** which is dependent on claim 15, Kano *et al.* also disclose (column 5, line 8 column 7, line 11) that the luminophore layer is comprised of CsBr:Eu.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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7. Claims 13 and 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kano *et al.* (US 4,741,993) in view of Leblans *et al.* (US 2003/0066972).

In regard to claim 13 which is dependent on claim 9, the detector of Kano *et al.* lacks an explicit description that the protective layer is comprised of poly-para-xylylene. However, Kano *et al.* also disclose (column 9, line 29 column 11, line 43) a polymer protective layer. Since Kano *et al.* do not disclose and/or require a specific polymer protective layer, one having ordinary skill in the art at the time of the invention would reasonably interpret the unspecified polymer protective layer of Kano *et al.* as any conventional polymer protective layer which does not require further description. Further, Leblans *et al.* teach (paragraphs 15-20) that a polymer protective layer is preferably vapor deposited from commercially available poly-para-xylylene. Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to provide a conventional polymer (e.g., poly-para-xylylene) for the unspecified polymer protective layer in the detector of Kano *et al.*, in order to form the polymer protective layer from a commercially available polymer.

Where an explicit definition is provided by the applicant for a term, that definition will control interpretation of the term as it is used in the claim (MPEP § 2111.01). In this case, the specification (paragraph 14) discloses that "The thickness of the parylene layer is between approximately 8 to 80  $\mu\text{m}$ . Such layers can be imprinted, spun out (a distribution of the fluid parylene via centrifugal force due to rotation), or vapor-deposited" and further (paragraph 21) that "Pressure, spin, or evaporation methods are considered to be vapor deposition methods".

In regard to claim **17**, Kano *et al.* disclose (Fig. 1) a method for producing a polymer protective layer (column 9, line 29 column 11, line 43) on an image detector for an x-ray image that comprises a luminophore layer, the method comprising hardening (*i.e.*, providing a "high surface hardness"; column 4, lines 10-21) only a region (13b) of the protective layer (13a, 13b) that does not abut the luminophore layer (12). The method of Kano *et al.* lacks an explicit description of vapor-depositing a polymer protective layer on the luminophore layer. However, Kano *et al.* also disclose (column 9, line 29 column 11, line 43) a polymer protective layer. Since Kano *et al.* do not disclose and/or require a specific polymer protective layer, one having ordinary skill in the art at the time of the invention would reasonably interpret the unspecified polymer protective layer of Kano *et al.* as any conventional polymer protective layer which does not require further description. Further, Leblans *et al.* teach (paragraphs 15-20) that a polymer protective layer is preferably vapor deposited from commercially available poly-para-xylylene. Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to vapor-deposit a conventional polymer (*e.g.*, poly-para-xylylene) for the unspecified polymer protective layer in the method of Kano *et al.*, in order to form the polymer protective layer from a commercially available polymer.

In regard to claim **18** which is dependent on claim 17, Kano *et al.* also disclose (column 11, lines 40-43; column 13, line 19 to column 14, line 49; Fig. 1) that a region with a thickness of at least 5  $\mu\text{m}$  (*i.e.*, 1  $\mu\text{m}$  to 100  $\mu\text{m}$  thick with an example of a 20  $\mu\text{m}$  thick layer) that abuts the luminophore layer is not hardened.

In regard to claim **19** which is dependent on claim 17, Kano *et al.* also disclose (column 11, lines 40-43; column 13, line 19 to column 14, line 49; Fig. 1) that a region that does not abut the luminophore layer and that is hardened is at least 3  $\mu\text{m}$  thick (*i.e.*, 1  $\mu\text{m}$  to 100  $\mu\text{m}$  thick with an example of a 30  $\mu\text{m}$  thick layer).

In regard to claim **20** which is dependent on claim 17, Kano *et al.* also disclose (column 4, lines 10-21; column 9, line 62 to column 3, line 62) that the hardening ensues via electron beam treatment.

8. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kano *et al.* (US 4,741,993) in view of Leblans *et al.* (US 2003/0066972) as applied to claim 17 above, and further in view of Dopper (US 2001/0055653).

In regard to claim **21** which is dependent on claim 17, the modified method of Kano *et al.* lacks pre-treating the luminophore layer via a plasma treatment prior to the vapor-depositing of the protective layer. Dopper teaches (paragraph 5) it is known to use a plasma treatment apparatus to clean the surface onto which another layer is to be deposited, in order to obtain good adhesion strength. Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to clean (via a plasma treatment) the surface onto which another layer is to be vapor deposited in the modified method of Kano *et al.*, in order to obtain good adhesion strength.

### ***Conclusion***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shun Lee whose telephone number is (571) 272-2439. The examiner can normally be reached on Monday-Thursday.

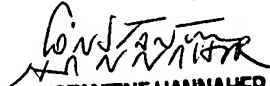


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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on (571) 272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SL

  
CONSTANTINE HANNAHER  
PRIMARY EXAMINER